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EXAMINER

VALENTIN, JUAN D

ART UNIT	PAPER NUMBER
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2877

DATE MAILED: 07/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/033,258

Applicant(s)

LIAO ET AL.

Examiner

Juan D Valentin II

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 14 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Examiner is unable to figure out what is being claimed in claim 14. Applicant is asked to please clean up the claim language in order to better understand what is being claimed.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 39 & 40 rejected under 35 U.S.C. 102(e) as being fully anticipated by Zhang (USPN '197).

Claim 39

Zhang in conjunction with Figs. 2 & 5 discloses an optic switch (100) comprising an input device and first and second output devices. Zhang discloses the input device being adapted

to convey an optic signal into the optic switch and the first and second output devices being adapted to selectively convey the optic signal out of the optic switch. Zhang discloses a primary reflection device (114) having a primary reflective surface movable between a non-engaged position and an engaged position. Zhang discloses a secondary reflection device having a secondary reflective surface which is parallel to and opposes the primary reflective surface when the primary reflection device is at the engaged position (Fig. 5). Zhang discloses wherein when the primary reflection device is at the non-engaged position, the optic signal is allowed to directly pass to the first output device and when the primary reflection device is at the engaged position, the optic signal is reflected by the primary and secondary reflective surfaces and redirected to the second output device (col. 3, line 44-col. 5, line 2).

Claim 40

Zhang in conjunction with Figs. 2 & 5 discloses an optic switch (100) comprising first and second optic inputs and first and second optic outputs wherein the first input and the first output being aligned with each other and forming a first optic path therebetween and the second input and the second output being aligned with each other and forming a second optic path therebetween. Zhang discloses the first and second optic paths intersecting at an intersection point, the first and second optic inputs being adapted to respectively convey first and second optic signals to the first and second optic outputs along the first and second optic paths. Zhang discloses a first reflective surface (114) being positionable on the optic paths but not exactly at the intersection point thereof, an auxiliary reflective surface (Fig. 5) being positioned opposite to the first reflective surface and cooperating with the first reflective surface for reflection and redirection of the first optic signal toward the second output. Zhang discloses a second reflective

surface (114) being positionable at the intersection point of the optic paths for reflection and redirection of the second optic signal toward the first optic output (col. 3, line 44-col. 5, line 2).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 9, 12, & 38 rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang in view of Guinard (USPN '040).

Claim 1

Zhang in conjunction with Figs. 2 & 5, discloses a movable mirror (114) type optic switch (100) comprising at least an optic input device for directing an optic signal into the optic switch and at least an optic output device for directing the optic signal out of the optic switch (col. 3, line 44-col. 4, line 10). Zhang further discloses at least a reflection system comprising a first reflective surface, a second reflective surface and a third reflective surface (Fig. 5) wherein the optic signal that is directed into the optic switch by the optic input device is reflected two times by the first and third reflective surfaces (col. 4, lines 48-58).

Zhang substantially teaches the claimed invention except that it fails to show a casing. Guinard shows that it is known to provide a casing (support, col. 3, lines 9-11) for a mechano-optical coupling device. It would have been obvious to someone of ordinary skill in the art to

combine the device of Zhang with the casing (support) of Guinard for the purposes of providing mechanical stability for the optical switch.

Claim 2

Zhang substantially teaches the claimed invention except that it fails to show the optic output device, the reflection system and a driving device received and mounted in the casing. Guinard shows that it is known to provide optic output device, the reflection system and a driving device mounted in a casing (Fig. 3, col. 3, lines 9-10) for a mechano-optical coupling device. It would have been obvious to someone of ordinary skill in the art to combine the device of Zhang with the receiving and mounting of optical elements in the casing of Guinard for the purposes of providing mechanical stability for the optical switch.

It would have been obvious to someone of ordinary skill in the art at the time of the claimed invention to receive and mount optical elements and driving devices within a casing or housing since it was well known in the art.

Claim 3

Applicant will be appreciated that the reference of Zhang in view of Guinard discloses wherein the first reflective surface, the second reflective surface and the third reflective surface are substantially parallel (Zhang, Fig. 5).

Claim 9

Zhang discloses a movable mirror type optic switch wherein the optic switch comprises a first optic input device, a first optic output device, a second optic input device and a second optic output device (col. 3, line 44-col. 4, line 10).

Zhang substantially teaches the claimed invention except that it fails to show each optic device comprise at least a collimator. Guinard shows that it is known to provide a collimator in each optical device (Fig. 3, col. 4, lines 12-25) for a mechano-optical coupling device. It would have been obvious to someone of ordinary skill in the art to combine the device of Zhang with the optic devices with collimators in the casing of Guinard for the purposes of providing light collimation.

Claim 12

Zhang in view of Guinard discloses a movable mirror type optic switch wherein the optic signal that is directed into the optic switch by the optic input device is reflected three times by the first reflective surface and the third reflective surface and then directed out of the optic switch by the optic output device (Zhang, Fig. 5).

Claim 38

Zhang in conjunction with Figs. 2 & 5, an optic switch (100) comprising a casing to which first input device, first output device, second input device and second output device are attached, the first and second input devices being adapted to convey optic signals into the optic switch and the first and second output devices being adapted to convey optic signals out of the optic switch (col. 3, line 44-col. 4, line 10). Zhang further discloses a movable reflection device (114) arranged in the casing and movable between a non-engaged position and an engaged position (Fig. 5). Zhang discloses the movable reflection device having first and second reflective surfaces and an additional third reflective surface which is parallel to and opposes the first reflective surface when the movable reflection device is at the engaged position (col. 4, line 48-col. 5, line 2). Zhang discloses wherein when the movable reflection device is at the

non-engaged position, optic signals conveyed into the optic switch by the first and second input devices are allowed to directly pass to the first and second output devices respectively, while when the movable reflection device is at the engaged position, the optic signal conveyed into the optic switch by the second input device is reflected by the second reflective surface to the first output device and the optic signal conveyed into the optic switch by the first input device is reflected at least three times by both the first reflective surface and the third reflective surface and redirected to the second output device (col. 3, line 44-col. 5, line 2).

Zhang substantially teaches the claimed invention except that it fails to show a casing. Guinard shows that it is known to provide a casing (support, col. 3, lines 9-11) for a mechano-optical coupling device. It would have been obvious to someone of ordinary skill in the art to combine the device of Zhang with the casing (support) of Guinard for the purposes of providing mechanical stability for the optical switch.

It would have been obvious to someone of ordinary skill in the art at the time of the claimed invention to receive and mount optical elements within a casing or housing since it was well known in the art.

4. Claims 4-8, 10, 11, & 13-37 rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang (USPN '197) in view of Guinard (USPN '040) and further in view of Sparks et al. (USPN '757 B1, hereinafter Sparks).

Claim 4

Zhang in view of Guinard substantially teaches the claimed invention except that it fails to show wherein the reflection system comprises a movable reflection device and a fixed

reflection device. Sparks shows that it is known to provide a fixed mirror as well as a moveable mirror on the same module (Fig. 2, col. 3, lines 10-19) for an optical switch. It would have been obvious to someone of ordinary skill in the art to combine the device of Zhang in view of Guinard with the fixed mirror as well as a moveable mirror on the same module of Sparks for the purposes of providing adjustable optical switching.

Claim 5

It is well known and would have been obvious to someone of ordinary skill in the art at the time of the claimed invention to mount the fixed reflection device in the casing. Therefore it is the position of the Office that the reference of Zhang in view of Guinard and further in view of Sparks reads on the claimed limitation.

Claim 6

Zhang in view of Guinard and further in view of Sparks further disclose wherein the first and second reflective surfaces are mounted to the movable reflection device (Zhang, col. 4, lines 1-10, Fig. 2).

Claim 7

Zhang in view of Guinard and further in view of Sparks further disclose wherein the third reflective surface is mounted to the fixed reflection device and opposes the second reflective surface (Zhang, Fig. 5). Applicant will be appreciated that the reference of Zhang in view of Guinard and further in view of Sparks reads on the Applicants claimed limitations.

Claim 8

Applicant will be appreciated that the reference of Zhang in view of Guinard and further in view Sparks discloses wherein the first reflective surface, the second reflective surface and the third reflective surface are substantially parallel (Zhang, Fig. 5).

Claim 10

Zhang in view of Guinard and further in view Sparks further discloses a movable mirror type optic switch wherein the first optic input device is substantially aligned with the first optic output device and wherein the second optic input device is substantially aligned with the second optic output device (Zhang, Fig. 2).

Claim 11

Zhang in view of Guinard and further in view Sparks further discloses a movable mirror type optic switch wherein a first optic path is formed between the first optic input device and the first optic output device and a second optic path is formed between the second optic input device and the second optic output device, the first and second optic paths intersecting each other, and wherein the second reflective surface is located at the intersection of the first and second optic paths for reflecting and redirecting an optic signal from the second optic input device to the first optic output device (Fig. 2, col. 3, line 44-col. 4, line 26).

Claim 13

Zhang in conjunction with Figs. 2 & 5, discloses an optic switch (100) comprising at least two optic input devices for directing optic signals into the optic switch and at least two optic output devices for directing the optic signals out of the optic switch (col. 3, line 44-col. 4, line

10). Zhang discloses a movable reflection device (114) comprising two movable reflective surfaces and movable between two positions (col. 4, line 63-col. 5, line 2).

Zhang substantially teaches the claimed invention except that it fails to show a casing. Guinard shows that it is known to provide a casing (support, col. 3, lines 9-11) for a mechano-optical coupling device. It would have been obvious to someone of ordinary skill in the art to combine the device of Zhang with the casing (support) of Guinard for the purposes of providing mechanical stability for the optical switch.

Zhang in view of Guinard substantially teaches the claimed invention except that it fails to show a fixed reflection device comprising at least one fixed reflective surface. Sparks shows that it is known to provide a fixed reflection device comprising at least one fixed reflective surface (Fig. 2, col. 3, lines 10-19) for an optical switch. It would have been obvious to someone of ordinary skill in the art to combine the device of Zhang in view of Guinard with the fixed mirror of Sparks for the purposes of providing a stable and simple optical switching module.

Zhang in view of Guinard and further in view of Sparks discloses a movable mirror type optic switch wherein the optic signal that is directed into the optic switch by the optic input device is reflected two times by the first reflective surface and the third reflective surface and then directed out of the optic switch by the optic output device (Zhang, Fig. 5).

Claim 14

Zhang in view of Guinard and further in view of Sparks discloses wherein when the movable reflective surfaces are parallel to the fixed reflective surface (Zhang, Fig. 5).

Claim 15

Zhang in view of Guinard and further in view of Sparks discloses wherein the optic switch comprises a first optic input device, a first optic output device, a second optic input device and a second optic output device (Zhang, Fig. 2).

Claim 16

Zhang in view of Guinard and further in view of Sparks discloses wherein the first optic input device is substantially aligned with the first optic output device and wherein the second optic input device is substantially aligned with the second optic output device (Zhang, Fig. 2).

Claim 17

Zhang in view of Guinard and further in view of Sparks discloses wherein a first optic path is formed between the first optic input device and the first optic output device and a second optic path is formed between the second optic input device and the second optic output device, the first and second optic paths intersecting each other, and wherein one of the movable reflective surfaces is located at the intersection of the first and second optic paths for reflecting and redirecting an optic signal from the second optic input device to the first optic output device (Zhang, Fig. 2, col. 3, line 44-col. 4, line 26).

Claim 18

It is well known and would have been obvious to someone of ordinary skill in the art at the time of the claimed invention to mount the input and output optic devices in the casing. Therefore it is the position of the Office that the reference of Zhang in view of Guinard and further in view of Sparks reads on the claimed limitation.

Claim 19

Zhang in view of Sparks substantially teaches the claimed invention except that it fails to show an optical switch further comprising two reinforcing walls formed inside the casing and supporting the optic input devices and optic output devices. Guinard shows that it is known to provide an optical switch further comprising two reinforcing walls (10-2 & 11-2) formed inside the casing and supporting the optic input devices and optic output devices (Fig. 3, col. 6, lines 16-33) for a mechano-optical coupling device. It would have been obvious to someone of ordinary skill in the art to combine the device of Zhang in view of Sparks with the two reinforcing walls of Guinard for the purposes of providing mechanical stability for the optical switch.

Claim 20

Zhang in view of Sparks substantially teaches the claimed invention except that it fails to show wherein each reinforcing wall comprises two branches. Guinard shows that it is known to provide an optical switch further comprising two reinforcing walls (10-2 & 11-2) formed inside the casing and supporting the optic input devices and optic output devices (Fig. 3, col. 6, lines 16-33) for a mechano-optical coupling device. It would have been obvious to someone of ordinary skill in the art to combine the device of Zhang in view of Sparks with each reinforcing wall comprising two branches of Guinard for the purposes of providing mechanical stability for the optical switch.

Claim 21

Zhang in view of Sparks substantially teaches the claimed invention except that it fails to show wherein each branch of each reinforcing wall defines a bore for receiving and retaining a corresponding one of the optic input and output devices and a collimating device of the one of

the optic input and output devices. Guinard shows that it is known to provide an optical switch further comprising two reinforcing walls (10-2 & 11-2) formed inside the casing and supporting the optic input devices and optic output devices (Fig. 3, col. 6, lines 16-33 & col. 4, lines 12-35) for a mechano-optical coupling device. It would have been obvious to someone of ordinary skill in the art to combine the device of Zhang in view of Sparks with reinforcing wall defining a bore for receiving and retaining a corresponding one of the optic input and output devices and a collimating device of Guinard for the purposes of providing mechanical stability for the optical switch.

Claims 22 & 37

Zhang in view of Guinard and further in view of Sparks discloses further comprising a stop for limiting the movement of the movable reflective surfaces (Zhang, Fig. 6).

Claim 23

Zhang in conjunction with Figs. 2 & 5, discloses an optic switch comprising a first optic input device, a first optic output device, a second optic input device, and a second optic output device (col. 3, line 44-col. 4, line 10). Zhang discloses a movable reflection device (114) having first and second reflective surfaces and movable between first and second positions (col. 4, line 63-col. 5, line 2).

Zhang substantially teaches the claimed invention except that it fails to show the input and output optic devices attached to a casing and a cover. Guinard shows that it is known to provide a casing with input and output optic devices mounted therein and a cover (col. 6, lines 16-33) for a mechano-optical coupling device. It would have been obvious to someone of ordinary skill in the art to combine the device of Zhang with the a casing with input and output

optic devices mounted therein and a cover of Guinard for the purposes of providing mechanical stability for the optical switch. There is no patentable weight given to the claimed cover, and it would have been obvious to someone of ordinary skill in the art to use a cover on a casing or housing in order to seal the insides of the casing from outside contaminants.

Zhang in view of Guinard discloses a reflection device comprising at least a reflective surface, which is opposite to, and parallel to one of the reflective surfaces of the movable reflection device (Zhang, Fig. 5). Zhang in view of Guinard substantially teaches the claimed invention except that it fails to show a fixed reflection device comprising at least one fixed reflective surface. Sparks shows that it is known to provide a fixed reflection device comprising at least one fixed reflective surface (Fig. 2, col. 3, lines 10-19) for an optical switch. It would have been obvious to someone of ordinary skill in the art to combine the device of Zhang in view of Guinard with the fixed mirror of Sparks for the purposes of providing a stable and simple optical switching module.

It is well known and would have been obvious to someone of ordinary skill in the art at the time of the claimed invention to mount a driving device for driving the movable reflection device between the first and second positions (Zhang, col. 4, line 63-col. 5, line 2). Therefore it is the position of the Office that the reference of Zhang in view of Guinard and further in view of Sparks reads on the claimed limitation.

Applicant will be appreciated that the references of Zhang in view of Guinard and further in view of Sparks disclose wherein when the movable reflection device is at the first position, the movable reflection device is located outside a first optic path formed between the first optic input device and the first optic output device and a second optic path formed between the second optic

input device and the second optic output device, whereby an optic signal from the first optic input device follows the first optic path toward the first optic output device and an optic signal from the second optic input device follows the second optic path toward the second optic output device; and wherein when the movable reflection device is at the second position, the movable reflection device is located on the optic paths, the optic signal from the first optic input device is redirected to the second optic output device and the optic signal from the second optic input device is redirected to the first optic output device (Figs. 2 & 5, col. 3, line 44-col. 4, line 10).

Claim 24

Zhang in view of Sparks substantially teaches the claimed invention except that it fails to show wherein the casing defines four opposite holes on four corners thereof, two reinforcing walls being formed inside the casing, each reinforcing wall having two branches. Guinard shows that it is known to provide the casing defines four opposite holes on four corners thereof, two reinforcing walls (10-2 & 11-2) being formed inside the casing, each reinforcing wall having two branches (Fig. 3, col. 6, lines 16-33 & col. 4, lines 12-35) for a mechano-optical coupling device. It would have been obvious to someone of ordinary skill in the art to combine the device of Zhang in view of Sparks with the casing defines four opposite holes on four corners thereof and two reinforcing walls being formed inside the casing of Guinard for the purposes of providing mechanical stability for the optical switch.

It is the position of the Office that even though the reference of Zhang in view of Guinard and further in view of Sparks does not specifically disclose a holder for holding the fixed reflection device being formed in the casing, it does outline the use of a fixed mirror regardless of how it is mounted within the device (Sparks, col. 3, lines 10-20). In light of the applicants-

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disclosure, there is no critically distinguishing holder feature in the applicants disclosure that exemplifies novelty over prior art disclosure. Therefore producing the same results as the applicants limitation, therefore the reference of Zhang in view of Guinard and further in view of Sparks reads on applicants claimed limitation.

Claim 25

Applicant will be appreciated that the reference of Zhang in view of Guinard and further in view of Sparks discloses an optic switch wherein each branch of each reinforcing wall defines a bore (Guinard, Fig. 3).

Claim 26

It is the position of the Office that even though the reference of Zhang in view of Guinard and further in view of Sparks does not specifically disclose a holder for holding the fixed reflection device being formed in the casing, it does outline the use of a fixed mirror regardless of how it is mounted within the device (Sparks, col. 3, lines 10-20). In light of the applicants disclosure, there is no critically distinguishing holder feature in the applicants disclosure that exemplifies novelty over prior art disclosure. Therefore producing the same results as the applicants limitation, therefore the reference of Zhang in view of Guinard and further in view of Sparks reads on applicants claimed limitation.

Claim 27

Zhang in view of Sparks substantially teaches the claimed invention except that it fails to show wherein each of the optic input and output devices comprises a capillary. Guinard shows that it is known to provide each of the optic input and output devices comprises a capillary (70-2 & 71-2) (Fig. 3, col. 4, lines 12-35) for a mechano-optical coupling device. It would have been

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obvious to someone of ordinary skill in the art to combine the device of Zhang in view of Sparks with the casing defines four opposite holes on four corners thereof and two reinforcing walls being formed inside the casing of Guinard for the purposes of providing mechanical stability for the optical switch.

Official notice taken. It is the position of the Office that a securing member and strain relief are common in the art and would have been obvious to use for someone of ordinary skill in the art. Therefore, the reference of Zhang in view of Guinard and further in view of Sparks reads on the claimed limitations.

Claim 28

Official notice taken. It is the position of the Office that it is obvious that a securing member will secure an optic device, whether it's an input or output device to a corresponding hole of a casing. Therefore, the reference of Zhang in view of Guinard and further in view of Sparks reads on the claimed limitations.

Claim 29 & 30

Official notice taken. It is obvious and well known in the art of optical switch packaging, not only to attach a strain relief to a securing member, but also to extend a fiber through the strain relief and the securing member and then attaching the fiber end to a capillary. Therefore no patentable weight can be given to the claimed limitations and the reference of Zhang in view of Guinard and further in view of Sparks reads on the claimed limitations.

Claim 31

Zhang in view of Sparks substantially teaches the claimed invention except that it fails to show an optic switch wherein the optic input devices, the optic output devices, the movable

reflection device and the fixed reflection device are received and fixed inside an interior space defined between the casing and the cover. Guinard shows that it is known to provide optic switch wherein the optic input devices, the optic output devices, the movable reflection device and the fixed reflection device are received and fixed inside an interior space defined between the casing and the cover (Fig. 6, col. 7, lines 9-36) for a mechano-optical coupling device. It would have been obvious to someone of ordinary skill in the art to combine the device of Zhang in view of Sparks with the casing defines four opposite holes on four corners thereof and two reinforcing walls being formed inside the casing of Guinard for the purposes of providing mechanical stability for the optical switch.

Claim 32

Zhang in view of Sparks substantially teaches the claimed invention except that it fails to show wherein the optic input and output devices are secured to the branches of the reinforcing walls. Guinard shows wherein the optic input and output devices are secured to the branches of the reinforcing walls (Fig. 3, col. 6, lines 16-33 & col. 4, lines 12-35) for a mechano-optical coupling device. It would have been obvious to someone of ordinary skill in the art to combine the device of Zhang in view of Sparks with the casing defines four opposite holes on four corners thereof and two reinforcing walls being formed inside the casing of Guinard for the purposes of providing mechanical stability for the optical switch.

Claim 33

It is well known and would have been obvious to someone of ordinary skill in the art at the time of the claimed invention to use an optic switch wherein the driving device comprises an arm connected to the movable reflection device for moving the movable reflection device

between the first and second positions (Zhang, col. 4, line 63-col. 5, line 2). Therefore it is the position of the Office that the reference of Zhang in view of Guinard and further in view of Sparks reads on the claimed limitation. Applicant will be appreciated that it is common and well known technique in the art to use a "arm" in order to move a reflecting device into and out of respective positions.

Claim 34

It is well known and would have been obvious to someone of ordinary skill in the art at the time of the claimed invention to use an optic switch wherein a retainer is attached to the arms of the driving device, the first and second reflective surfaces being retained in the retainer (Zhang, col. 4, line 63-col. 5, line 2). It is the position of the Office that the claimed retainer is simply a mechanical connecting means in order to retract the reflecting means by use of the claimed arm. This involves no inventive step neither shows novelty over prior art optical switching systems. Therefore, Applicant will be appreciated that the references of Zhang in view of Guinard and further in view of Sparks read on the claimed limitation.

Claim 35

It is well known and would have been obvious to someone of ordinary skill in the art at the time of the claimed invention to use an optic switch wherein the driving device comprises a relay or a solenoid (Zhang, col. 4, line 63-col. 5, line 2). It is the position of the Office that the claimed solenoid is simply an electromagnetic actuator that repulses and attracts when energized or dennergized. This involves no inventive step, and neither shows novelty over prior art optical switching systems. Therefore, Applicant will be appreciated that the references of Zhang in view of Guinard and further in view of Sparks read on the claimed limitation.

Claim 36

It is well known and would have been obvious to someone of ordinary skill in the art at the time of the claimed invention to use an optic switch wherein the first and second reflective surfaces of the movable reflection device and the reflective surface of the fixed reflection device are formed by a coating of high reflectivity material (Zhang, col. 4, lines 48-58). It is the position of the Office that the claimed reflective surfaces formed by a coating of high reflectivity material would have been obvious to someone of ordinary skill in the art. Applying a coating of high reflectivity material to create a mirror involves no inventive step, and neither shows novelty over prior art optical switching systems. Therefore, Applicant will be appreciated that the references of Zhang in view of Guinard and further in view of Sparks read on the claimed limitation.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juan D Valentin II whose telephone number is (703) 605-4226. The examiner can normally be reached on M-Th., Every other Fr..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on (703) 308-4881. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308- 0955.

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